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BEEF PRODUCTION IN THE SOUTH.

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THE SOUTH AS A FIELD FOR BEEF PRODUCTION.

There is no section of the country which can produce cattle more cheaply than the South, for the lands are still cheap, the grazing is good, the pasture season is long, feed can be produced at a minimum cost, and inexpensive shelter only is required for the animals during the winter months. The native cattle throughout this section are poor in quality and small in size, but they are also cheap in price. They are not worthless, however, and their cheapness is their redeeming feature, for they are good foundation stock from which may be produced an excellent herd of beef animals by judicious selection and by the continued use of purebred beef bulls.

Cheap lands combined with cheap cows for foundation stock make it possible to start in the cattle business in the South with an outlay of far less capital than in most other sections of the country. Then, too, expensive barns are unnecessary for beef cattle in the South; the only shelters needed are open sheds facing south, under which young cattle may take shelter from cold rain or wind. Mature beef cattle usually need no other protection than that afforded by trees, hedges, underbrush, canebrakes, and other natural shelters.

PASTURE LANDS AND GRASSES.

Of the total land area of the South, 73.1 per cent is made up of grazing land, woods, or waste lands, and a very large portion of the latter would produce excellent pasture for cattle. The types of soil and the nature of the land vary widely in each State, but in each one are found soils which produce abundant grazing. The stiffer soils usually produce better grazing and fatter cattle than do the light or sandy soils. The lime lands, black prairie lands, and alluvial lands furnish the best pastures.

NOTE.—Gives instruction in handling and feeding beef cattle, the best breeds for the South, and the best pasture plants. Adapted to the Southern States.

The natural grasses of the coastal region of the South are Bermuda, carpet grass, and lespedeza.¹ Bur clover should be planted on the sod. If pasture grasses are planted, some Italian rye grass should be planted with the other seed, as this grass will grow rapidly and furnish early spring grazing before the other grasses get started. On the sandy coast lands it furnishes good pasture the latter part of the winter, surpassing rye for this purpose. A mixture of redtop and alsike clover should be planted on the wet lands.

That portion of the South which lies between the coastal region and the Piedmont region may be called the upland section. There Bermuda, lespedeza, carpet grass, and crab grass are the most important natural grazing plants. Redtop, orchard grass, paspalum, alsike clover, bur clover, white clover, and tall oat grass may be planted for grazing purposes. If the soil is damp, as creek bottom land, alsike, redtop, and paspalum will do well. The sod of paspalum should be planted, as the seed are scarce and but a small percentage of them germinate. If there is much lime in the soil the clovers will grow readily.

In the Piedmont region the principal permanent grasses are blue grass and white clover. On the uplands of this section a mixture of orchard grass, tall oat grass, and alsike clover may be planted for pasture purposes and gives very satisfactory grazing. Sometimes red clover is planted with other grasses where the land is to be grazed but two or three years before being put into cultivation. Red clover or red clover and timothy are sometimes planted for hay, and after cutting the first year are grazed the second year, after which the land may be planted to other crops. Redtop is often sown on the damp lands and, combined with the white clover which usually grows on such lands, furnishes good grazing.

Johnson grass is usually found on the black prairie lands and the lime lands of Alabama and Mississippi. This furnishes good grazing for one or two years, after which it is necessary to plow the land to get it well started again. Melilotus, or "sweet clover," is quite generally sown on the Johnson-grass land for pasture purposes and gives good grazing for two years. A combination of melilotus, bur clover, white clover, Johnson grass, and lespedeza furnishes excellent grazing for nine months of the year. As melilotus will grow on poor lime soils which may be but a few inches deep, it is the most valuable plant to sow for pasture on such soils. On damp prairie soils alsike clover, paspalum, and white clover grow well.

¹ Full information concerning the pasture grasses and forage crops of the cotton region is given in Farmers' Bulletin 509, which may be secured free of charge upon application to the Department of Agriculture.

FORAGE CROPS AND FEEDS.

A great variety of leguminous hays and other forage crops can be grown in the South. In the whole of the cotton region corn, sorghum, cowpeas, and soy beans produce good crops for forage purposes. Crimson clover and vetches grow well in the South Atlantic coastal region. In Florida and along the Gulf coast velvet beans, beggar weed, teosinte, and Japanese sugar cane are the principal forage crops. In the Piedmont region alsike clover, red clover, timothy, millet, orchard grass, and sometimes alfalfa are grown for hay.

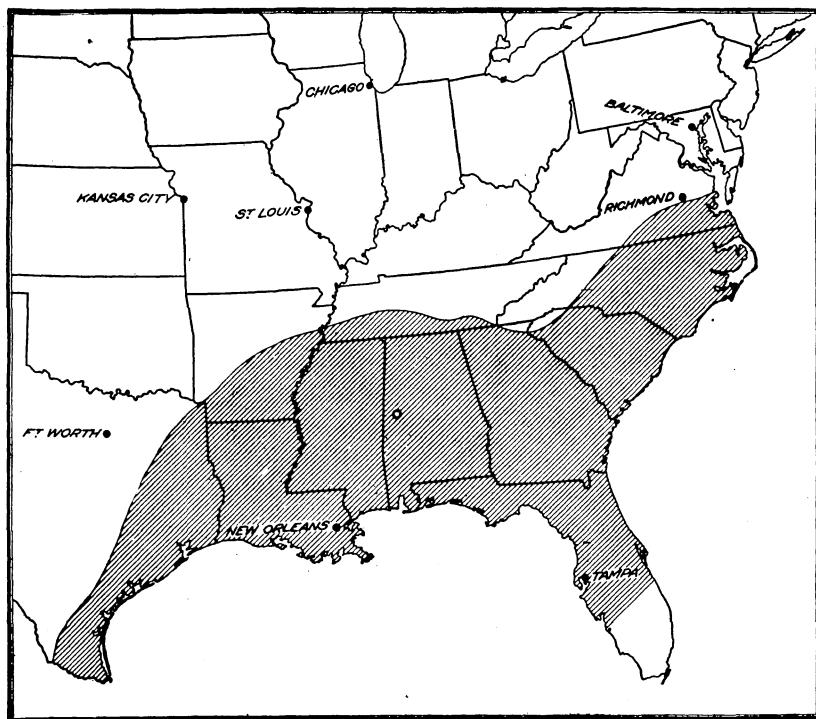


FIG. 1.—The shaded area represents the portion of the United States to which the results secured in the Alabama feeding experiments are applicable. The dark circle in Alabama shows the approximate location of the test farm. The location of the various cattle markets to which southern cattle are shipped are shown.

The most important plants grown for hay and forage in the black prairie section and on the alluvial soils, in addition to corn and sorghum, are alfalfa, melilotus, lespedeza, Johnson grass, Bermuda, hairy vetch, and common or Oregon vetch. All of these plants are especially adapted to the prairie or alluvial soils. In the semiarid portions of the Southwest kafir, milo maize, sweet sorghum, and feterita are the principal forage plants. Some native grasses are cut for hay, while Rhodes grass is being grown to a certain extent for this purpose.

Corn grows well throughout the South and is the principal crop grown for grain for feeding purposes and is more generally used for silage than any other crop. Because of its adaptability to almost all soils, the wide variation of time during which it may be planted, and its luxuriant growth in southern latitudes it is considered the most important silage crop. On rich soils a yield of 10 tons of silage per acre is not uncommon. The sorghums stand near the head of the list as the most important forage crops, because of the wide range of territory in which they may be grown and their adaptability to widely different climatic conditions. Sweet sorghum is usually grown where the rainfall is abundant, while the nonsaccharin or grain sorghums are grown where the rainfall is less or where semiarid conditions prevail, as in portions of Texas and Oklahoma. Milo maize and kafir each make a good quality of silage and will produce a good yield of forage during a season which is so dry that Indian corn would make little growth. Sweet sorghum can be planted later than corn and often makes a heavier yield. The cost of growing sorghum and corn is about the same. A combination of corn and sorghum makes a silage which is greatly relished by cattle. The corn may be permitted to mature slightly more when ensiled with sorghum than when put up alone.

Velvet beans are seldom used for hay, but they are raised extensively for forage purposes near the Gulf coast. They furnish excellent grazing during the winter months. Japanese sugar cane is also used as a roughage for cattle in the extreme South. Soy beans are sometimes combined with corn for producing silage, and such silage has a higher feeding value than corn silage.

The most important hay crops of the South are alfalfa, Johnson grass, cowpeas, soy beans, and in some sections lespedeza, crab grass, Bermuda, red clover, melilotus, crimson clover, and prairie grasses. Excellent yields of cowpea hay, soy-bean hay, or sorghum can be secured after one of the small-grain crops or crimson clover has been taken off the land. Lespedeza is grown quite extensively for hay on the alluvial lands of Louisiana, Mississippi, and Arkansas. It yields from 2 to 4 tons of hay per acre, which is equal to that of red clover or alfalfa in feeding value. The stems are fine and the hay is made up largely of leaves. Crimson clover has been successfully grown for hay along the Atlantic coast and with varying success in other portions of the South. As it matures in the spring, the hay is rather hard to cure. The hay is of fair quality only, being inferior to red clover. Crimson clover has been more successfully grown as a grazing crop than as a hay crop.

In addition to the farm-grown feeds already enumerated, the southern cattleman can secure cottonseed meal, which has proven to be more valuable, pound for pound, than any other feed.

METHODS AND COST OF RAISING CATTLE.

A common practice in raising cattle in the South is to use the native or scrub cattle for breeding purposes and to let them run on the free range or on pastures and old fields the year through, with little care or attention. This is a poor practice and a wasteful method. Good calves can be secured by breeding these native cows to purebred bulls of the beef breeds, selecting the best of the female calves for breeders and mating them with another purebred bull of the same breed. The quality and size of the cattle can be very rapidly improved by this method. Few farmers should try to raise purebred cattle as a business, as it requires more skill to make the business a success than the average farmer can give to it. Any good farmer, however, can make a success of grading up his native herd by the use of purebred bulls.



FIG. 2.—What good blood will do. A native Alabama cow and her calf by a purebred Hereford bull.

For several years the Bureau of Animal Industry and the Alabama Experiment Station have been conducting experiments to determine the cost of raising beef cattle to various ages under farm conditions. This work has been conducted under actual field and feed-lot conditions with native cattle. In every case a trained man supervised the work and kept the records, and in some instances this man actually fed the cattle. The experiments have been repeated and original results tested by the duplications. Very little effort has been made by the department to give publicity to this work, although the data have been published by both the station and the department.¹ Now that the results of several years' feeding are available and the principles of beef production, in the extreme South at least, have

¹ See B. A. I. Bulletins 103, 131, 147, and 159; or Alabama Bulletins 150, 151, 158, and 163. Other publications will be issued at an early date.

been fairly well worked out, it is believed to be desirable to present these results in popular form. An added reason is the demand from the South for practical advice on beef production, especially in those sections which have been released from quarantine against Texas fever.

In one experiment¹ conducted in northern Alabama, when the calves were grazed on native grasses for about six months of the year, and grazed on the corn and cotton stalk fields and the waste lands and fed some rough feed and a little cottonseed the rest of the year, it was found that when all expenses of the calves and their dams, including labor, feed, pasture, 6 per cent interest on the capital invested, depreciation in value, insurance, and the manure credited at \$1.25 per ton, the cost per hundred pounds of raising a calf to 12 months of age was \$2.35; to 24 months of age, \$2.28; to 30 months of age, \$2.39; and to 33 months, \$2.31. When all of the above expenses were charged against the calves and no credit was made for the manure produced, the cost of raising the calves increased to \$4.96 to \$5.25 per hundredweight.

A later experiment² was carried out under farm conditions such as prevail throughout the South below the thirty-fifth parallel of latitude and without the detrimental influence of the cattle tick. The calves were born in March and April and grazed with their mothers until frost. They were then taken from their mothers and turned into cornstalk fields, cotton fields, and a peanut field which was to be pastured by fattening hogs, and given about 1 pound of cottonseed cake per day. The calves were about 9½ months old when the fields were exhausted. The average weight of each calf at this time was 460 pounds. The cost per head was \$14.36, or \$3.12 per hundredweight, when the feed consumed by the calves and their dams was charged at market prices, pasturage was charged at 50 cents per head per month, 6 per cent interest was charged on the capital invested, 10 per cent depreciation in value of the breeding herd was taken into consideration, taxes were paid on the cattle, and labor had been charged at the prevailing prices.

The calves were then fed for three months on corn silage, sedge-grass hay, and cottonseed meal. At the end of this time they weighed 560 pounds each and had cost \$20.24 per head, or \$3.61 per hundred-weight. When sold they returned a net profit of \$6.81 each after all of the above expenses had been paid.

FINISHING CATTLE FOR THE MARKET.

FATTENING CALVES.

At least three points may be urged in favor of fattening beef cattle as calves: First, more breeding animals can be kept on a farm when

¹ See B. A. I. Bulletin 147, or Alabama Bulletin 150.

² Results to be published at an early date.

the offspring are disposed of at an early age than when they are retained until maturity; second, the younger the animal the cheaper each pound of beef is made; third, the money invested is turned more rapidly when the animals are sold when young.

Calves which can be profitably finished for the market must be high in quality and well bred, otherwise they will not fatten properly. Then, too, more care and skill must be exercised in feeding a young animal than an old one; young calves will not grow and fatten with any degree of satisfaction under a careless system of feeding and management. The younger the animal the greater the skill



FIG. 3.—A champion Shorthorn cow that has produced many prize winners. Such cows give a liberal flow of milk for the calves. They have proven especially desirable for the farmer who raises small numbers of cattle.

required to care for and feed it; one case of overfeeding will often put the stomach and bowels out of condition for weeks.

The Bureau of Animal Industry and the Alabama Experiment Station have conducted five experiments in fattening calves.¹ These tests were made during the years 1909 to 1913, inclusive. The calves used were grades of the Shorthorn, Hereford, Aberdeen-Angus, and Red Polled breeds. They were about 8 months old when put into the feed lots. Each lot of animals was composed of from 15 to 52 head.

¹ See B. A. I. Bulletin 147, or Alabama Bulletin 158. Later experiments now ready for publication.

All calves in the experiments made satisfactory gains; the average for all lots was about 1.65 pounds per calf per day. The cost of the gains ranged from \$5.13 to \$6.97 per hundred pounds.

The fattening of calves for market proved profitable in every test made.

Cottonseed meal, cottonseed hulls, and alfalfa hay proved to be an excellent ration and a profitable one for fattening calves. Cottonseed meal and cottonseed hulls proved to be a good fattening ration for calves for a short feeding period.

When fed in conjunction with cottonseed meal, corn silage of rather poor quality produced the same daily gains on calves as did cottonseed hulls and cheapened the cost of the daily gains.

The substitution of two-thirds of the cottonseed meal in a ration with corn did not prove profitable when corn cost 70 cents a bushel and cottonseed meal \$26 a ton.

In one test it was profitable to replace one-third of the cottonseed meal with corn-and-cob meal, but in a second test nothing was gained by the introduction of corn-and-cob meal. The first year the calves which received corn-and-cob meal made slightly larger daily gains, and sold for more than did the calves which received cottonseed meal as the sole concentrate. The second year the addition of corn to the ration did not increase the size of the daily gains, nor did the calves which received corn sell for any more per pound than the other calves.

In a third test 52 high-grade Aberdeen-Angus calves fed on a ration of about 3 pounds of cottonseed meal, 2 pounds of cowpea hay, and as much cottonseed hulls as they would eat made daily gains at a cost of \$5.55 per hundred pounds and returned a net profit of \$3.50 each.

In a fourth experiment 34 calves which were fed for 112 days in the dry lot and then fed 89 days on pasture made good daily gains, but the profits were not as large as they would have been if the calves had been sold at the end of the winter. The gains made during the summer were good and were made cheaply, but the price of calves was so much lower in the summer than at the close of winter that the continued feeding into the summer months was not profitable.

FATTENING MATURE CATTLE.

WINTER FATTENING.

To realize the greatest profit on cattle it is necessary to finish them on the farm where they are raised. This is not always possible, however, for in certain sections of the country grazing conditions

are not good. In each case it is necessary to buy cattle and finish them during the winter and spring months on dry feeds, if manure is desired for the crops. As manure is almost essential to the production of good tobacco, cotton, and other farm crops, a farmer is often willing to feed cattle with little cash profit in order to secure manure for his crop. This is often cheaper for him than maintaining a herd of beef cattle, especially if the farm is small or the pasture land limited. Land may be so high in price that it is more profitable to buy feeders than to raise cattle. Sometimes it is desired to build land up more rapidly than can be done by keeping

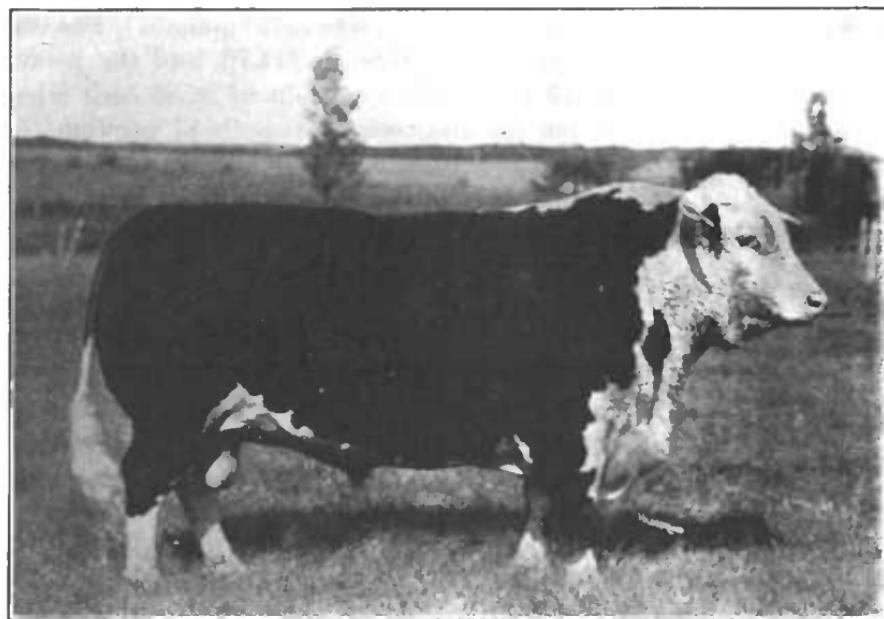


FIG. 4.—A champion Hereford bull of the type which has proven so desirable in beef sires. Notice the wonderful depth of chest and strong constitution, as well as the thickness of loin and fullness of quarter.

a few cows the year through, so cattle are bought for feeding purposes and fattened, primarily to obtain the manure.

Cottonseed meal is the principal and most important southern concentrate. In fact, southern feeders seldom give other concentrated feeds consideration. More attention, however, is demanded in a selection of the roughages, as there are a number which may be produced cheaply on the farm. One of the questions most frequently asked is, "Can I afford to buy cottonseed hulls to feed, or must I depend entirely upon farm-grown roughages?" To answer this question a discussion of some of the experiments made at several southern experiment stations is given, showing the values of some of the principal roughages for fattening cattle.

THE VALUE OF COTTONSEED HULLS AND MEAL AS A FATTENING RATION FOR BEEF CATTLE.

For a number of years cottonseed hulls and cottonseed meal have been considered the most important ration for fattening cattle in the South. This ration produces rapid gains for the first 60 days, but after the third month the gains usually decrease very fast. Experiments carried on in South Carolina,¹ Texas,² Alabama,³ North Carolina,⁴ and Mississippi⁵ show that for feeding periods of three to five months' duration the steers fed on cottonseed hulls and meal made daily gains of 1.43 pounds to 2.06 pounds. The amount of cottonseed meal required to make 100 pounds of gain varied from 282 to 589 pounds and the amount of hulls from 1,120 to 2,030 pounds. The cost of 100 pounds of gain varied from \$7.66 to \$14.76, and the profits varied from a loss of \$5.15 per head to a profit of \$6.88 each when cottonseed meal cost \$26 per ton and cottonseed hulls \$7 per ton.

Cottonseed hulls is a good roughage for cattle which are to be fed but a short time, and for such periods are more valuable than would seem from the chemical analysis.

CORN SILAGE AS A SUBSTITUTE FOR COTTONSEED HULLS.

Silage is very popular as a roughage for several reasons: Large yields can be produced per acre; it can be stored in a comparatively small space; the trouble of curing hays and fodders for feeding is reduced; the feeding period can be very materially lengthened; and it has proven more profitable for finishing beef cattle for the market than any other roughage.

Silage is a quick finishing roughage, as it produces large daily gains, gives mellowness to the animals, and gloss or "bloom" to the coat. No trouble is ever experienced in getting animals to eat it. The decrease in the amount of gain as the feeding period lengthens beyond the third month is not abrupt as with hulls and meal.

Feeding tests made in Alabama,⁶ South Carolina,¹ North Carolina,⁴ and Texas⁷ show that the daily gains made by steers fed on silage were usually greater than when hulls were used and the amount of grain required to make 100 pounds of gain was smaller in every test with the silage-fed steers. The use of silage reduced the cost of the daily gains. The longer the feeding period the greater was the difference in favor of silage.

¹ South Carolina Bulletin 169.

² Texas Bulletin 153.

³ B. A. I. Bulletin 159, or Alabama Bulletin 163; B. A. I. Bulletin 103.

⁴ North Carolina Bulletins 218 and 222.

⁵ Mississippi Bulletins 121 and 92.

⁶ Alabama Bulletin 163, or B. A. I. Bulletin 159.

⁷ Texas Bulletin 97.

The silage-fed steers finished better than the ones fed on hulls, sold for higher prices per pound, killed a larger percentage of marketable meat, and made greater profits.

When cottonseed meal costs \$26 per ton, silage when used for fattening steers is usually more profitable at \$3 per ton than cottonseed hulls at \$7 per ton.

CORN STOVER, SORGHUM, AND JOHNSON GRASS HAY, versus HULLS FOR STEERS.

Corn stover when used as the sole roughage for fattening steers is not entirely satisfactory. It is not very palatable, and steers

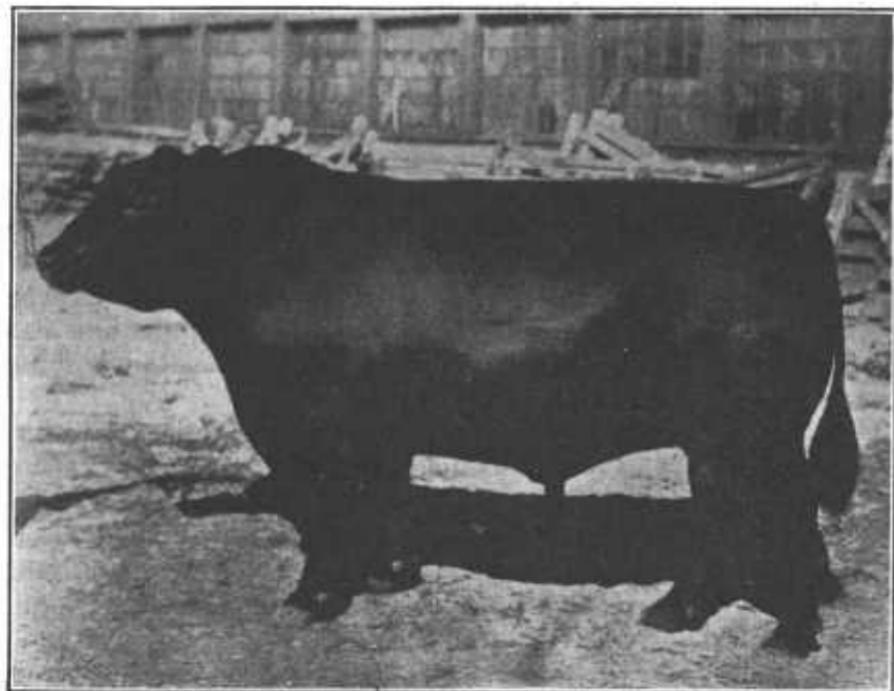


FIG. 5.—An Aherdeen-Angus hull showing quality, compactness, and smoothness. Such hulls get calves which grow rapidly, mature early, and finish out well in the feed lot.

will not consume as much of it as they should. When, however, it is fed in reasonable amounts along with clover, alfalfa hay, or corn silage, it is a profitable and satisfactory roughage as a feed for finishing steers. In tests where stover was the sole roughage smaller daily gains, a larger amount of grain to make 100 pounds of gain, and more expensive gains were made than when cottonseed hulls were fed. Unless stover can be secured cheaper than hulls it will be more profitable to use the latter in rations for fattening animals. Steers which receive stover as the sole roughage do not finish well and do not sell as well as steers which have been fed on

cottonseed hulls or corn silage. Stover is a farm-made roughage which can be used to best advantage by the breeding herd or the stock cattle.

In extensive tests in Alabama it was learned that sorghum fodder could not be substituted profitably for cottonseed hulls. The steers fed on sorghum hay made smaller and more expensive gains than those fed on hulls. Sorghum was not equal, pound for pound, to cottonseed hulls for finishing cattle.

When Johnson grass hay was worth \$10 and hulls worth \$7 per ton it was found to be more profitable to feed hulls as a sole roughage than to feed a combination of Johnson grass hay and hulls.

WINTERING STEERS PREPARATORY TO SUMMER FATTENING ON PASTURE.

The tests¹ conducted to determine the most profitable way of wintering steers which were to be fattened on pasture the following summer lasted three years. Each year a carload of steers was run on range, which consisted of cotton and cornstalk fields and some native grasses growing on the waste land, without any feed, while the other lots of steers were run on range and given, in addition, a half ration of cottonseed meal and hulls, or cotton seed, cowpea hay, or cheap waste hay. The records were kept during the winter and also during the subsequent summer, when they were being fattened for market.

The following conclusions were drawn from these tests:

Steers which had to secure maintenance from range alone during the winter lost considerably in weight—over 100 pounds per head.

Steers which received a half ration of hulls and meal in addition to the range were as heavy in the spring as they were in the fall, when the test began. The average cost of wintering a steer in this manner was \$5.21.

Cattle which received cowpea hay lost but 9 pounds each during the winter, while those wintered on coarse waste hay lost a little weight but were wintered at a cost of but \$2.06 per head.

The steers which began the grazing season the following summer in the thinnest condition made the greatest gains in weight, and those which had been fed during the winter made the smallest gains during the summer. This was true to such an extent that at the end of the summer the steers which had been fed during the winter could hardly be detected from the ones which became so thin on range alone.

The winter feeding of steers was profitable when the steers were to be finished for market early in the summer, but was not profitable when steers were grazed the whole of the following summer.

¹ See B. A. I. Bulletin 131, and Alabama Bulletin 151. Other results to be published at an early date.

The use of the old corn and cotton stalk fields, cheap or damaged hays, and old straw stacks proved to be the most economical method of wintering steers which were to be grazed all summer.

Cattle which are being wintered on range alone should not be permitted to get so poor that they become weak. If an animal gets very poor, it should be fed some in order to avoid loss.

FATTENING STEERS ON SOUTHERN PASTURES.

The use of certain supplementary feeds in addition to the grass has been found to be more profitable than grazing cattle without feed.¹



FIG. 6.—A champion Galloway bull. This breed has a rugged constitution and is especially adapted to withstand rigorous winters and graze upon scanty pastures. Few are found in the South.

Cottonseed cake is an excellent supplementary feed for cattle on pasture. Larger daily gains, but more expensive gains, were secured when cake was fed, but the cake-fed steers sold for enough more at the end of the season to make the feeding of cake extremely profitable.

Cold-pressed cake did not give as satisfactory results as the common cottonseed cake, when cold-pressed cake cost \$23 and cottonseed cake \$26 per ton.

Cotton seed at \$14 a ton proved somewhat more valuable than cottonseed cake at \$26 a ton for feeding to steers on pasture.

¹ See Bureau of Animal Industry Bulletins 131 and 159 or Alabama Bulletins 151 and 163.

The use of alfalfa hay in addition to cottonseed cake for steers on pasture did not prove profitable or satisfactory.

Steers which were fed a heavy ration of cottonseed cake on pasture and finished early in July proved far more profitable than steers which did not receive as much cake daily, but were fed for a longer time and sold late in the summer.

The feeding of cattle on pasture increased the size of the gains, caused the animals to fatten much faster and smoother, increased their value per hundredweight, and produced better carcasses and a higher percentage of marketable meat than the grazing of steers on pasture alone.

THE VALUE OF SHELTER FOR FATTENING BEEF CATTLE.

Cattle make better gains when fed under open sheds facing the south than when confined in closed barns. The use of sheds saves a small amount of feed which would be ruined by rain falling upon it, and they also protect from the weather all manure which is dropped under them. Sheds are essential for feeding cattle on heavy clay or prairie soils, in order that the steers may have a dry place to lie down and to prevent injury to the land by trampling in wet weather. On sandy loam lands steers which were fed under shelter did not sell for enough more to pay for the upkeep of the sheds during each of three years.

On sandy or sandy loam lands the cattle may be profitably fed on the cultivated fields, thereby dropping the manure directly upon the land. The troughs should be moved occasionally, so that the manure may be scattered more uniformly on the land. If large numbers of cattle are fed, they should be moved to different fields during the feeding period and the manure plowed under.

In three experiments in Alabama¹ shelter other than that furnished by trees, undergrowth, etc., proved unnecessary for mature animals.

Sheds are absolutely essential in feeding calves for the market.

TICK ERADICATION.

The Federal Government realized the importance of the South as a field for producing beef cattle and began investigations in breeding and feeding cattle in the South in 1904, and in 1906 began a systematic fight on the cattle tick. From that time until February 16, 1914, there have been 215,908 square miles of land actually freed of the tick, and at the present time the work is being carried on in every Southern State. In some States, as in Mississippi, the work is progressing very fast, and it is simply a question of time when the whole South will be free of the Texas fever tick.

¹ See Animal Industry Bulletins 103 and 159 and Alabama Bulletin 163.

BREEDS OF CATTLE ADAPTED TO THE SOUTH.

Notwithstanding the fact that the type of the animal is of very much more importance than the breed, there are some breeds of beef cattle which are better suited than others to the South. The different breeds are not so entirely similar as to prohibit the possibility of making a mistake in the selection of one to suit a particular farm or community. The question is often asked, "What is the best breed of beef cattle for the South?" The answer to this general question can not be given by naming any one particular breed. There is no such thing as a "best" breed of beef cattle. One breed may be specially adapted for a certain purpose, or a

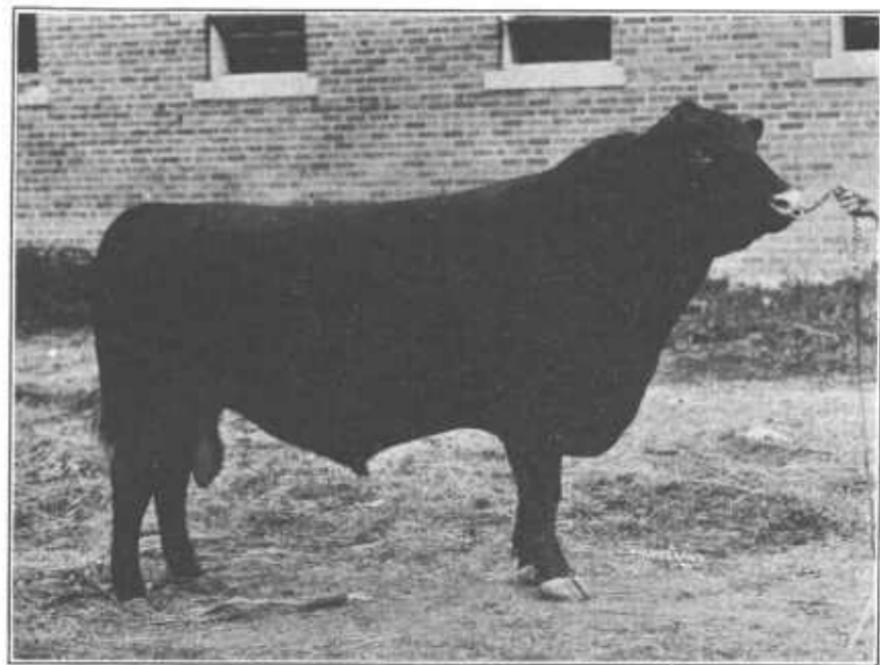


FIG. 7.—A champion Red Polled bull of the type which represents the dual-purpose animals.

certain farm, or a certain section of the country, while another may be better suited for a different purpose, a different farm, or a different section of the country. It is, however, very often possible to answer the question, "What is the best breed of beef cattle for my farm?" when the adviser is perfectly familiar with the characteristics of both the breeds of beef cattle and the farm.

The breeds of cattle with which this bulletin deals are divided into two general classes, the beef type and the dual-purpose type. The Shorthorn, Hereford, Aberdeen-Angus, and Galloway are the prominent breeds belonging to the beef type, while the Devon and the Red Polled are, at least for the South, the most important breeds belonging to the dual-purpose type.

THE SHORTHORN.

The Shorthorn is popular everywhere in the world where beef animals are grown. In conformation they adhere closely to the beef type, though certain families, as the Bates, have exceedingly strong milking tendencies. They are the largest of our beef animals, the cows usually attaining weights from 1,300 to 1,400 pounds and the bulls from 1,800 to 2,100 pounds or more, where conditions are favorable and the cattle tick has been eradicated. When compared with other beef breeds of cattle the Shorthorn is a heavy milker; no beef breed is better able to nourish the calf. For this reason the American farmer has always regarded the Shorthorn as better suited to general farm purposes than any other breed. A few Shorthorn cows have, in fact, made exceedingly high milking records. In color the Shorthorn may be pure red, red and white, pure white, or roan. This breed produces high-class beef, but, compared with the Aberdeen-Angus, the Shorthorn will not dress as high a percentage of high-class meat. For this reason the Shorthorn steer has not in recent years maintained his reputation at the fat-stock shows, the purebred and grade Aberdeen-Angus or Hereford having surpassed him repeatedly. Shorthorn bulls, however, mated with grade cows have revolutionized the character of the meat cattle of the world.

The Shorthorn is well adapted to the South, but they are not as early maturing and do not graze as well as do the Herefords. On a farm, however, where the pasture grasses are well developed and too much effort is not required to get a sufficient amount to eat, it would be difficult to find a breed of beef animals which would surpass the Shorthorn.

Polled Durham cattle are really Shorthorns, except that they are hornless. The "single standard" Polled Durham was the first type of hornless Shorthorn to attract attention. The originators of this type used pure Shorthorn bulls on "muley" cows of the Shorthorn type, and finally developed what they called the Polled Durham breed. These cattle were very much like the average Shorthorn, except that they tended toward the dual-purpose type. The "double standard" Polled Durham represents the demand of Shorthorn breeders for a hornless breed of Shorthorn cattle; these cattle are eligible to registration in the American Shorthorn Herdbook, as well as in the Polled Durham Herdbook.

THE HEREFORD.

This breed of cattle has been materially improved within the last 25 years and now ranks as one of the most prominent breeds of beef cattle. In fact, this breed is now probably the most popular in the South. In size this is one of the largest breeds, ranking next to the

Shorthorn. From the standpoint of the average farmer, the weakest point is their inability to give a large quantity of milk; in fact, the cows average low in the amount of milk produced and are open to criticism in this respect. The color is characteristic, the body being red and the head and face white.

The breed is especially well adapted to southern conditions. For many years to come the South must necessarily be mainly a grazing district. On account of exceptional vigor, rustling ability, a thick coat of hair, and temperament, the Hereford has taken first place as a grazing animal. The Hereford is more vigorous than the Shorthorn, and on this account is often capable of securing a good living

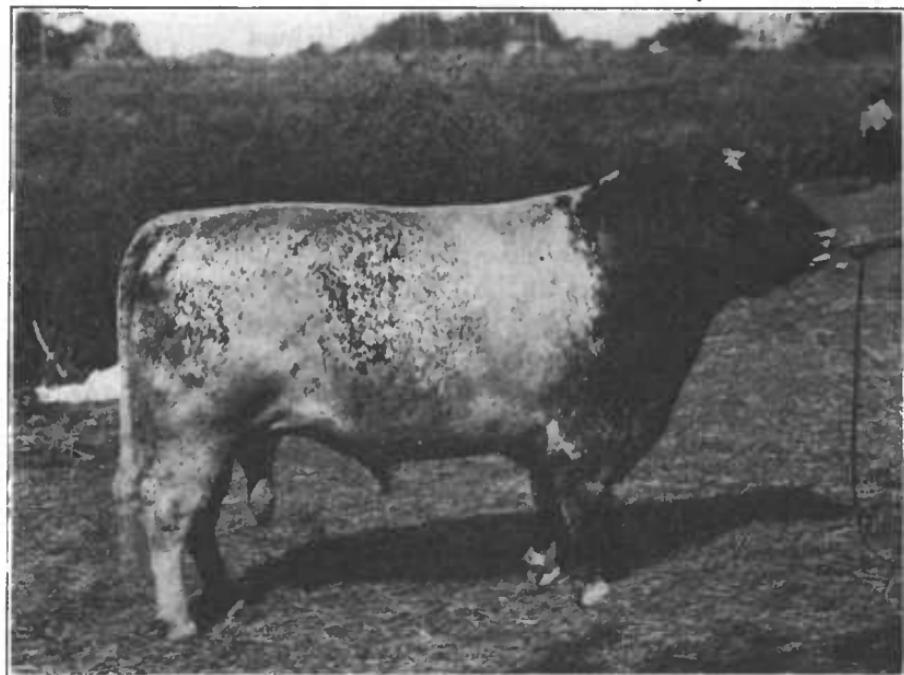


FIG. 8.—A champion Polled Durham bull. A type that is popular among the breeders of these cattle.

from pastures which afford a too limited amount of grass for Shorthorn cattle. No breed of beef cattle equals the Hereford for withstanding the unfavorable conditions which always accompany the range system of farming. Hereford bulls have accomplished remarkably fine results when crossed with the native cows of the ranges of Texas and the Western States.

THE ABERDEEN-ANGUS.

In general conformation this breed differs somewhat from that of the Shorthorn and Hereford, the body being, as a rule, lower to the ground and more cylindrical. This breed, however, is not as large as the Hereford or Shorthorn, but does not fall far short of the weights

reached by the two larger breeds. The almost universal color is black, although red occurs at rare intervals. A small amount of white on the underlines is not objectionable. As milkers the Aberdeen-Angus cows rank only fair. They do, however, afford more milk than the Hereford, but the breed is not the equal of the Shorthorn in this respect. This breed produces remarkable beef animals. The Aberdeen-Angus steer in the fat-stock shows has made a wonderful record, surpassing all other breeds repeatedly in this respect.

Although the Aberdeen-Angus is hardly the equal of the Hereford on the range, nevertheless, on account of his vigor and rustling habits, he is well suited to range conditions, and is therefore well adapted to the South. The Aberdeen-Angus is much better suited than the Shorthorn to southern grazing conditions.

THE GALLOWAY.

This breed of beef animals has never been extensively introduced into the South; a few herds, however, are found in Texas. They originated and were developed in a very cold and damp country—southwestern Scotland—so have never been thought of as being suited to the southern part of the United States, where the summers are long and hot. The individuals of this breed are short of leg, close to the ground, polled, black in color, have long hair, and are slow to mature when compared with the Shorthorns, Herefords, and Aberdeen-Angus. The Galloway is an extremely hardy animal and is well suited to the ranges of the Northwest, where food may be scarce, and where the winters are severe.

THE RED POLLED.

The native home of the Red Polled cattle is in England. This breed represents the dual-purpose type in its true form, as the typical cows yield milk liberally and fatten quickly and satisfactorily when dry. The udder is often deficient in the fore part and the teats are usually large. The color varies from light to dark red, but a little white on the belly and udder is not particularly objectionable, although the solid color is preferred. The Red Polled cattle are not as heavy as the beef breeds, the cows under favorable conditions averaging perhaps 1,200 pounds. As beef producers these cattle hold very good rank, but of course they do not win the highest honors when shown in competition with the beef breeds. As milk producers they have long held high rank. At the Pan-American dairy test in 1901 five Red Polled cows took fifth rank among 10 breeds.

This breed of cattle is well suited to the South, and the southern farmer who wants a cow that will yield a good flow of milk and at the same time raise a calf which is acceptable from the beef

standpoint will not make a mistake in selecting the Red Polled cattle. They are hardy, gentle, and reasonably good grazing animals.

THE DEVON.

The Devon in conformation closely resembles the beef breeds, though it is smaller in size, mature bulls seldom weighing 2,000 pounds and usually from 1,400 to 1,800, while the cows weigh about 1,000 pounds when raised under good conditions. In color they vary from light to deep red, although the rich deep color is more popular. They have a white switch and may have some white on the under-part of the body, although white on other portions of the body is not permissible.

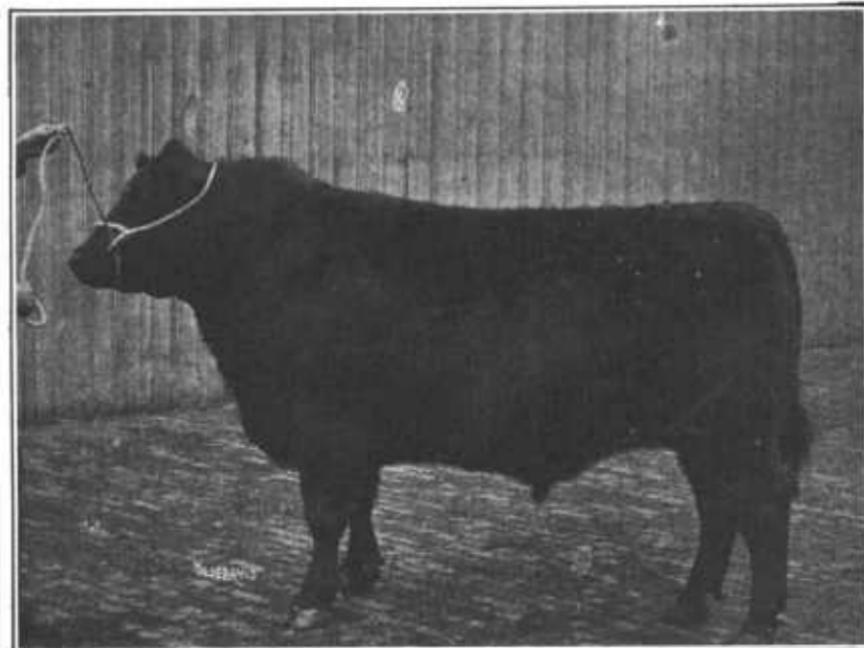


FIG. 9.—What good feeding will do when combined with good blood. International grand champion steer, 1912.

The Devon is a wonderful rustler, and will keep in good condition on pastures in which some cattle of the beef breeds could hardly subsist. They are slower of growth than the beef breeds, but do well in the feed lot, comparing very favorably with the Herefords or Shorthorns. The cows are usually good milkers, many of them giving more milk than the calf will take at first. The result of this abundant milk flow is usually a good calf.

In some sections of the South the Devons have become popular because of their capacity for grazing during the summer months and making use of the rough feeds and native grasses during the winter. There is no breed of cattle in this country which make work

oxen superior to the Devon. They are quick, intelligent, attain good size, and stand the heat well. For these reasons they are exceedingly popular in the timber sections and the lumber camps of the South.

SUMMARY.

Good pastures are essential for profitable beef production. Plant pasture grasses over the waste lands.

Use purebred beef bulls for grading up the native stock.

Always select the best heifers for breeding purposes.

Eradicate the ticks on the farm.

Use the coarse fodders, straws, and the stalk fields for wintering the breeding herd.

Wean the calves when the pastures get short. Put them in the cornfields and pea fields while weaning and teach them to eat cottonseed cake or cottonseed meal.

Raise and finish beef cattle on the same farm when possible.

A mixture of cottonseed meal, cottonseed hulls, and alfalfa hay is a good ration for fattening calves.

Silage is the best roughage for fattening any class of cattle.

More care is necessary in feeding calves than in feeding grown cattle.

At the present prices corn silage is a cheaper and better feed for fattening beef cattle than cottonseed hulls.

Hulls and cottonseed meal make an excellent feed for a short feeding period, but do not produce good gains on cattle after the third month.

It is not entirely satisfactory to use corn stover as the sole roughage.

When Johnson-grass hay costs \$10 and hulls \$7 per ton it is more profitable to feed the hulls alone.

Summer feeding on pasture is usually more profitable than winter feeding.

Finishing cattle early in the summer is usually more profitable than finishing them later in the season.

Fattening steers on grass and cottonseed cake is nearly always more profitable than grazing them without feed.

Thin steers when put on pasture make larger and cheaper daily gains than fleshy ones.

Pound for pound cold-pressed cottonseed cake is not equal to the common cottonseed cake.

The use of a small amount of corn in addition to cottonseed cake has proven profitable for feeding steers on grass.

